ON EDUCATIONAL ATTAINMENT IN TRANSITION ECONOMIES

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Abstract

The paper examines various indicators of educational attainment in transition countries. Both quantity indicators, such as average years of schooling, percentage of no schooling, and adult literacy rates, and quality indicators, such as pupil-teacher ratios, dropout rates, and repetition rates are taken into account. These indicators are compared between transition countries and developed and developing countries. In addition, developed transition countries are compared to less developed transition countries.

Keywords: education, transition countries

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1. Introduction

Transition from centrally planned towards market economies has been a remarkable phenomenon in Central and Eastern Europe in recent years. Initially, in the early 1990's, transition economies exhibited substantial declines in production. As economic reforms

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were being introduced, allocative efficiency was improving, which eventually helped to achieve positive growth rates of real gross domestic product (GDP) in most transition economies.

Achieving rapid economic growth in the long run is a great challenge for Central and Eastern European policymakers. While the recent economic performance has been, in principle, determined by transition effects, the long-run economic behavior will depend mainly on neoclassical factors (see, e.g., Fischer et al., 1996), including the accumulation of human and physical capital.

Cross-country empirical studies have shown that human-capital levels are important determinants of long-run growth. These observations provide a motivation for the present paper, the purpose of which is to examine various educational attainment variables in transition economies and to provide a comparison of these records in transition economies with those in developing and developed countries. It is well known that educational attainment captures only some aspects of human capital. By analyzing these aspects, the present paper should be viewed as a plausible starting point for future research in the field of human capital in transition economies.

The principal data sources include the Barro-Lee data set (this data set is available from the web site http://www.worldbank.org/research/growth/ddbarle2.htm; see also Barro and Lee 1993, 1996, and Lee and Barro, 1997), *Statistical Yearbook* of UNESCO, various issues, *Human Development Report* of the United Nations Development Programme, various issues, and the data of the International Association for Evaluation of Educational Achievement (IEA).

For each indicator, the choice of countries depends on data availability. For this reason the selection of countries is in general different for different indicators. The indicators which are based on the Barro-Lee data set relate to 1990. For some indicators (such as adult literacy rates and public expenditure on education), the other data sources provide more recent estimates. Using these estimates makes it possible to construct a data set for a broader set of countries. The data on international test scores relate to 1995.

2. Comparative Analysis

In this section we examine indicators for which we have relevant data. We compare the group of transition countries with developed and developing countries. Furthermore, we compare developed transition countries with less developed transition countries. The comparative analysis is based on standard t-tests for differences in means. This comparative analysis constitutes the value added of the present paper.

2.1 Average Years of Schooling

The Barro-Lee data set contains average years of schooling in the population aged over 15 years and average years of schooling in the population aged over 25 years. Although the data set contains interesting breakdowns for average years of schooling at the primary, secondary, and higher levels, the focus of the present analysis is narrowed down to the total average years of schooling in the population aged more than 15 years (the TYR15 variable) in 1990, which reflects basic endowments in educated labor force. The results for average years of schooling in the population over 25 years would be similar.

The data set includes eight former centrally planned economies (see Table 1). The sample average in developed transition countries (former Czechoslovakia, former East Germany, Hungary, and Poland) is 9.58. The corresponding standard deviation is 0.51. The average in less developed transition countries (Bulgaria, Romania, former U.S.S.R., and former Yugoslavia) is 9.04; the standard deviation is 1.44. The test for the difference between developed and less developed transition countries results in the t-statistic of 0.70, which is well below the rejection value (1.94 for the 5% level of significance). Thus, although developed transition economies seem to be better endowed in TYR15 (higher sample mean) than less developed transition economies, this difference is not statistically significant.

In all the transition economies, the mean is 9.31, with a standard deviation of 1.05. In 21 world developed countries, the average is 8.68, and the standard deviation is 1.78.

Although the average for TYR15 is higher in the transition economies than in the developed economies, the difference between these two groups is not statistically significant (the corresponding t-statistic is 0.93). The average TYR15 in 84 developing countries is 4.47, with the standard deviation of 2.20. The difference between the transition countries and the developing countries is strongly significant (the t-statistic is equal to 6.13).

2.2 Average Years of Schooling Relative to Income

This subsection examines an interesting question of whether human capital is high in transition economies if rescaled by real GDP. Real GDP per capita figures (in U.S. dollars on a purchasing-power parity basis) are taken from *Human Development Report* (see Table 2). The data relate to 1994. For 108 countries, I have data for both average years of schooling (TYR15) (H) and real GDP per capita (Y). For each country, I construct a measure ln(H/Y). I test whether this measure is significantly higher in transition economies than in the rest of the world. For six transition countries (Bulgaria, former Czechoslovakia (income constructed from the data on the Czech Republic and Slovakia), Hungary, Poland, Romania, and former U.S.S.R. (income taken from the data on the Russian Federation)), the measure is significantly above the rest of the world. However, if we narrow the sample of transition countries to the three advanced ones (former Czechoslovakia, Hungary, and Poland), the result is no more significantly above the rest of the world. The problem is with a possible bias in the lowest-income world countries. In the lowest-income countries, the measure ln(H/Y) is influenced by the fact that average years of schooling do not fall so dramatically as the real GDP per capita does. If the lowest-income countries (those with the real GDP per capita below $2000) are excluded from the sample of world countries, then both all the given 6 and the given 3 transition economies are significantly above the world average.

More specifically:

-- in the six transition countries, the average ln(H/Y) equals –6.33, and the standard deviation is 0.26;

-- in the three advanced transition countries, the average ln(H/Y) equals –6.52, and the standard deviation is 0.22;

-- in 102 other world countries, the average ln(H/Y) equals –6.88, and the standard deviation is 0.73. This group is significantly below the six transition countries (the t-statistic is 1.84; the critical value is 1.66 for significance at the 5% level). However, this group is not significantly below the three transition countries (the t-statistic is 0.85);

-- in 75 other world countries without the lowest-income countries, the average ln(H/Y) is –7.14, and the standard deviation is equal to 0.59. This group is significantly below the group of the six transition countries (the t-statistic is 3.32) as well as below the group of the three transition countries (the t-statistic is 1.79).

2.3 Percentage of no Schooling

The sample of transition economies is identical to the subsection 2.1. I consider the Barro-Lee variable NO15 in 1990. This variable reflects the percentage of no schooling in the population aged more than 15 years (see Table 1).

The sample average in developed transition countries is 1.90. The corresponding standard deviation is 1.99. The average in less developed transition countries is 5.90; the standard deviation is 6.40. The test for difference between developed and less developed transition countries results in the t-statistic of 1.19, which is well below the rejection value. Thus, although developed transition economies have a lower sample mean of NO15 than less developed transition economies, this difference is not statistically significant.

In all the transition economies, the mean is 3.90, with a standard deviation of 4.87. In 21 world developed countries, the average is 3.62, and the standard deviation is 4.96.

Although the average for NO15 is higher in the transition economies than in the developed economies, the difference between these two groups is not statistically significant (the corresponding t-statistic is 0.13). The average NO15 in 83 developing countries is 35.61, with the standard deviation of 23.05. The difference between the transition countries and the developing countries is strongly significant (the t-statistic is equal to 3.87).

2.4 Adult Literacy Rates

The source of the data is *Human Development Report*. The data are for 1994. The sample of transition countries includes 25 countries (see Table 2). The Czech Republic, Estonia, Hungary, Poland, the Slovak Republic, and Slovenia are considered to be developed transition countries (these six countries have been classified as advanced reformers in Sachs, 1996).

In these six countries, average adult literacy rates are 98.5, and the standard deviation equals 1.2. In the remaining less developed transition countries, average adult literacy rates make 96.5, and the standard deviation is 3.3. The developed transition countries are not significantly above the less developed countries (the t-statistic equals 1.45).

In all the 25 transition countries, average adult literacy rates make 97.0, and the standard deviation is 3.0. In 21 world developed countries, average adult literacy rates are 98.9, and the standard deviation is 0.4. The developed countries are significantly above the transition countries (the t-statistic equals 2.84). In 129 developing countries, average adult literacy rates are equal to 69.8, and the standard deviation amounts to 22.4. The transition countries are significantly above the developing countries (the t-statistic equals 6.06).

2.5 Public Expenditure on Education

The source of the data is *Human Development Report*. The data relate to 1993/1994. The sample is identical to the previous subsection, only the observations for Armenia and Croatia are missing (see Table 2).

In the six developed transition economies, average public expenditure is 5.83 (in percentage of GNP), and the standard deviation equals 0.61. In the 17 remaining less developed transition economies, average public expenditure is 5.85, and the standard deviation is equal to 2.35. Thus there are almost equal averages in the developed and the less developed transition economies.

In all the 23 transition economies, average public expenditure makes 5.84, and the standard deviation equals 2.02. The average in 22 world developed countries is 6.09, with the standard deviation of 1.51. The developed countries are not significantly above the transition countries (the t-statistic equals 0.47). In 93 developing countries, the average is 4.18, and the standard deviation makes 1.83. The transition countries are significantly above the developing countries (the t-statistic equals 3.82).

2.6 Pupil-teacher Ratios

Pupil-teacher ratios at the primary and secondary levels in 1990 are taken from the Barro-Lee data set. This data set is extended using the *Statistical Yearbook* of UNESCO. The analysis is focused on European transition countries. For some transition countries, direct estimates for 1990 are not available; for these countries, more recent estimates are used. For Russia and Ukraine, pupil-teacher ratios at the secondary level are taken from the estimates in general education. Thus I have compiled a database for 18 transition countries (see Table 3).

a) P/T ratio at the primary level: In the seven developed transition countries (Czech Republic, East Germany, Estonia, Hungary, Poland, Slovak Republic, and Slovenia), the mean equals 17.7, and the standard deviation is 3.8. In the remaining 11 transition

countries, the mean is 20.0, and the standard deviation amounts to 5.2. The mean in the 7 developed transition countries is not significantly below the mean in the remaining transition countries (the t-statistic is 1.00). In all the 18 transition countries, the mean is 19.1, and the standard deviation equals 4.7. In 107 world developing countries, the mean is 33.7, and the standard deviation is 13.5. The mean in the developing countries is significantly above the mean in the transition countries (the t-statistic equals 4.53). In 22 world developed countries, the mean is 15.5, and the standard deviation is equal to 5.3. The mean in the developed countries is significantly below the mean in the transition countries (the t-statistic equals 2.22).

b) P/T ratio at the secondary level: In the 7 developed transition countries, the mean equals 12.7, and standard deviation is 3.1. In the remaining 11 transition countries, the mean is 13.8, and the standard deviation is equal to 4.0. The mean in the 7 developed transition countries is not significantly below the mean in the remaining transition countries (the t-statistic is 0.62). In all the 18 transition countries, the mean is 13.4, and the standard deviation equals 3.6. In 99 world developing countries, the mean P/T ratio is 21.0, and the standard deviation amounts to 6.8. The mean in the developing countries is significantly above the mean in the transition countries (the t-statistic equals 4.60). In 18 world developed countries, the mean is 12.5, and the standard deviation is 3.2. The mean in the developed countries is not significantly below the mean in the transition countries (the t-statistic equals 0.79).

2.7 Repetition Rates

The repetition rates at the primary level in 1990 are taken from the Barro-Lee data set. The data set is extended using the *Statistical Yearbook* of UNESCO. The data are available for 17 transition countries (see Table 3). At the secondary level, the data for seven transition countries (Bulgaria, former Czechoslovakia, Hungary, Poland, Romania, former U.S.S.R., and former Yugoslavia) in 1990 are taken from the Barro-Lee data set.

Table 3 presents the indicators for five countries. For Czechoslovakia, the repetition rate at the secondary level equals 1. For the U.S.S.R., this indicator makes 0.

a) Repetition rates at the primary level: In the six developed transition countries, the mean equals 2.00, and the standard deviation is 0.90. In the remaining 11 transition countries, the mean is 2.55, and the standard deviation is 1.57. The mean in the developed transition countries is not significantly below the mean in the remaining transition countries (the t-statistic is 0.78). In all the 17 transition countries, the mean is 2.35, and the standard deviation equals 1.37. In 94 developing countries, the mean is 12.6, and the standard deviation is 10.6. The mean in the developing countries is significantly above the mean in the transition countries (the t-statistic equals 3.99). In 21 developed countries, the mean is 3.3, and the standard deviation is equal to 4.3. The mean in the developed countries is not significantly above the mean in the transition countries (the t-statistic equals 0.88).

b) Repetition rates at the secondary level: In the three developed transition countries (former Czechoslovakia, Hungary, and Poland), the average equals 1.0 with a zero standard deviation. In the remaining four transition countries, the average is 2.8, and the standard deviation is 2.7. The average in the three developed transition countries is not significantly below the average in the four remaining transition countries (the t-statistic is 1.15). The mean in all the seven transition countries is 2.0; the standard deviation is 2.1. The average in the sample of 69 developing countries is 12.6, and the standard deviation is 9.8. The mean in the developing countries is significantly above the mean in the seven transition countries (the t-statistic is 2.85). In the sample of 18 developed countries, the average repetition rates at the secondary level make 11.7, and the standard deviation equals 9.3. The average in that sample is also significantly above the average in the sample of the seven transition economies (the t-statistic is 2.70).

2.8 Dropout Rates

The only data source is the Barro-Lee data set. Dropout rates are measured at the primary level in 1990; the data are available for eight transition economies: Albania, Bulgaria, former Czechoslovakia, former East Germany, Hungary, Poland, Romania, and former Yugoslavia. Table 3 presents these indicators for seven countries. The dropout rate for Czechoslovakia equals 7.

The mean in the four developed transition countries (former Czechoslovakia, former East Germany, Hungary, and Poland) is 6.0; the standard deviation is 1.4. The mean in the four remaining transition countries is 10.5; the standard deviation amounts to 7.9. The mean in the four remaining transition countries is not significantly above the mean in the four developed transition countries (the t-statistic equals 1.13). The mean in the sample of all the 8 transition countries makes 8.3; the standard deviation amounts to 7.3. The average in the sample of 101 developing countries is 30.3; the standard deviation is 23.2. Thus the average in the developing countries is significantly above the average in the transition countries (the t-statistic equals 2.66). In the sample of 19 developed countries, the mean is 2.9, and the standard deviation is 4.7. The mean in the developed countries is significantly below the mean in the transition countries (the t-statistic is 2.53).

2.9 International Test Scores

The main data collection for the Third International Mathematics and Science Study (TIMSS) took place in 1995 in more than 40 countries (all developed countries participated in this study). This study, which was officially started in 1990, is the greatest of all studies that have been so far realized in the field of education.

TIMSS followed other studies organized by the International Association for Evaluation of Educational Achievement (IEA). This association was founded in 1959 as a joint place of world research institutions. Since its foundation it has organized more than 15 studies in various areas of education.

TIMSS was organized for three age groups: population 1 – pupils in two subsequent classes with the highest percentage of 9-year old (typically class 3 and 4); population 2 – pupils in two subsequent classes with the highest percentage of 13-year old (typically class 7 and 8); population 3 – students in the last years of secondary education. Populations 1 and 2 were tested in mathematics and science. Population 3 was tested in mathematical and scientific literacy (i.e., ability to use normal mathematical and scientific terms and operations).

I have examined the results in population 1 (4^{th} class), population 2 (8^{th} class), and population 3. The data have been taken from the web site of the Czech Institute for Information in Education (http://www.uiv.cz), which takes over the data from the IEA.

a) Population 1, 4^{th} class, mathematics: 26 countries participated in this study, out of which there were four transition countries (Czech Republic, Hungary, Latvia, and Slovenia). Some of the countries did not satisfy certain requirements (e.g., satisfactory participation of schools and pupils, required age of tested pupils, and appropriate selection methods). In the sample of the four transition countries, the average score is 548.3, with the standard deviation equal to 17.3. For the other 22 countries that participated in this study (most of which were developed countries), the average is 525.3 and the standard deviation is 56.0. The mean in the group of the four transition countries is not significantly above the mean in the other countries (the t-statistic is 0.81).

b) Population 1, 4^{th} class, science: 26 countries participated in this study, out of which there were four transition countries (Czech Republic, Hungary, Latvia, and Slovenia). Some of the countries did not satisfy certain requirements. In the sample of the four transition countries, the average score is 536.5, with the standard deviation equal to 19.2. For the other 22 countries that participated in this study, the average is 522.3 and the standard deviation is 49.3. The mean in the group of the four transition countries is not significantly above the mean in the other countries (the t-statistic is 0.56).

c) Population 2, 8th class, mathematics: 41 countries participated in this study, out of which there were nine transition countries (Bulgaria, Czech Republic, Hungary, Latvia, Lithuania, Romania, Russia, Slovak Republic, and Slovenia). In the sample of the nine transition countries the mean score is 524.0, and the standard deviation is 31.4. I also consider two subgroups: developed transition countries (Czech Republic, Hungary, Slovak Republic, and Slovenia) and less developed transition countries (Bulgaria, Latvia, Lithuania, Romania, and Russia). For the four developed transition countries the mean result is 547.2, with the standard deviation of 11.7. For the five less developed transition countries, the mean is 505.5, and the standard deviation is 30.0. The mean in the developed transition countries is significantly above the mean in the less developed transition countries (with the t-statistic equal to 2.60). For the other 32 countries, the mean is 509.9, with the standard deviation equal to 61.7. The group of all the nine transition countries is not statistically significantly above the group of the other countries (the t-statistic equals 0.66). The group of the four developed transition countries is also not significantly above the group of all the other countries (the t-statistic is 1.19).

d) Population 2, 8th class, science: 41 countries participated in this study, out of which there were nine transition countries (see the previous paragraph). In the sample of the nine transition countries the mean score is 531.4, and the standard deviation is 38.3. For the four developed transition countries the mean result is 558.0, with the standard deviation 12.4. For the five less developed transition countries, the mean is 510.0, and the standard deviation is 39.1. The mean in the developed transition countries is significantly above the mean in the less developed transition countries (with the t-statistic equal to 2.33). For the other 32 countries, the mean is 511.7, with the standard deviation equal to 53.2. The mean in the group of all the nine transition countries is not statistically significantly above the mean in the group of the other countries (the t-statistic equals 1.03). The mean in the group of the four developed transition countries is significantly above the mean in the group of all the other countries (the t-statistic is 1.71; the critical value for the 5% level is 1.69).

e) Population 3, last year of secondary education, mathematical and scientific literacy: 21 countries participated in this study, out of which there were five transition countries (Czech Republic, Hungary, Lithuania, Russia, and Slovenia). In the sample of the five transition countries, the mean score is 481.6, and the standard deviation is equal to 18.8. I also consider two subgroups: developed transition countries (Czech Republic, Hungary, and Slovenia) and less developed transition countries (Lithuania, and Russia). For the three developed transition countries, the mean result is 489.0, with the standard deviation of 21.7. For the two less developed transition countries, the mean is 470.5, and the standard deviation is 7.8. The mean in the developed transition countries is not significantly above the mean in the less developed transition countries (with the t-statistic equal to 1.11). For the other 16 countries that participated in this study, the mean is 509.7, with the standard deviation equal to 51.1. The mean in all the five transition countries is not statistically significantly below the mean of the other countries (the t-statistic equals 1.02). The mean in the group of the two less developed transition countries is also not significantly below the mean in the group of all the other countries (the t-statistic is 0.95).

f) Population 3, last year of secondary education, results of students with an extended education of mathematics in the test in mathematics: 16 countries participated in this study, out of which there were four transition countries (Czech Republic, Lithuania, Russia, and Slovenia). Some countries did not satisfy certain requirements. In the sample of the four transition countries, the mean score is 500.5, and the standard deviation amounts to 34.6. I also consider two subgroups: developed transition countries (Czech Republic, and Slovenia) and less developed transition countries (Lithuania, and Russia). For the two developed transition countries the mean result is 472.0, with the standard deviation 4.2. For the two less developed transition countries, the mean is 529.0, and the standard deviation is 18.4. The mean in the developed transition countries is significantly below the mean in the less developed transition countries (with the t-statistic equal to 4.27), although one should be aware of the low size of the given samples. For the other 12 countries that participated in this study, the mean is 500.5, with the standard deviation equal to 37.6. The mean in

the two developed transition countries is not statistically significantly below the mean of the other countries (the t-statistic equals 1.04). The mean in the group of the two less developed transition countries is not significantly above the mean in the group of all the other countries (the t-statistic is 1.03).

g) Population 3, last year of secondary education, results of students with an extended education of physics in the test in physics: 16 countries participated in this study, out of which there were four transition countries (Czech Republic, Latvia, Russia, and Slovenia). Some countries did not satisfy certain requirements. In the sample of the four transition countries, the mean score is 501.8, and the standard deviation is 41.2. I also consider two subgroups: developed transition countries (Czech Republic and Slovenia) and less developed transition countries (Latvia and Russia). For the two developed transition countries, the mean result is 487.0, with the standard deviation 50.9. For the two less developed countries, the mean is 516.5, and the standard deviation equals 40.3. The mean in the developed transition countries is not significantly below the mean in the less developed transition countries (with the t-statistic equal to 0.64). For the other 12 countries, the mean is 500.4, with the standard deviation equal to 48.4. The mean in all the four transition countries is nearly equal to the mean of the other countries. The mean in the group of the two developed transition countries is not significantly below the mean in the group of the other countries (the t-statistic equals 0.36). The mean in the group of the two less developed transition countries is not significantly above the mean in the group of all the other countries (the t-statistic is 0.44).

3. Conclusion

Transition economies are well endowed with education, as measured by standard quantity and quality indicators. For average years of schooling, percentage of no schooling, adult literacy rates, public expenditure on education, pupil-teacher ratios, repetition rates, and dropout rates, the averages in transition countries are significantly

more favorable than those in developing countries. Most indicators of educational attainment in transition countries are comparable to those in developed countries. For average years of schooling, percentage of no schooling, public expenditure on education, pupil-teacher ratios at the secondary level, and repetition rates at the primary level, there is no statistically significant difference in means between transition and developed countries. For adult literacy rates, pupil-teacher ratios at the primary level, and dropout rates, the outcomes are significantly better in developed countries than in transition countries. However, for repetition rates at the secondary level, the results are more favorable in transition than in developed countries. In international test scores, transition countries are quite comparable to developed countries.

Across transition countries, the differences in educational attainment appear to be small. Sample averages are frequently somewhat better in developed than in less developed transition countries; however, these differences are typically not statistically significant.

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Table 1: Total average years of schooling (TYR15) and percentage of population with no schooling (NO15) in 1990 for the population over 15 years. Source: The Barro-Lee data set.

Country	TYR15	NO15
Bulgaria	9.18	4.2
Czechoslovakia	10.10	0.3
East Germany	9.82	4.8
Hungary	8.93	1.2
Poland	9.47	1.3
Romania	9.44	4.4
U.S.S.R.	10.5	0.0
Yugoslavia	7.05	15.0

Table 2: Adult literacy rates, public expenditure on education, and real income in 1994. Source: *Human Development Report.*

Country	Adult literacy rates (%)	Public expenditure (% GNP)	Real GDP per capita (PPP $)
Albania	85.0	3.0	2788
Armenia	98.8		1737
Azerbaijan	96.3	5.5	1670
Belarus	97.9	6.1	4713
Bulgaria	93.0	4.5	4533
Croatia	97.0		3960
Czech Republic	99.0	5.9	9201
Estonia	99.0	5.8	4294
Georgia	94.9	1.9	1585
Hungary	99.0	6.7	6437
Kazakstan	97.5	5.4	3284
Kyrgyzstan	97.0	6.8	1930

Latvia	**99.0**	**6.5**	**3332**
Lithuania	**98.4**	**4.5**	**4011**
Macedonia, FYR	**94.0**	**5.6**	**3965**
Moldova	**98.9**	**5.5**	**1576**
Poland	**99.0**	**5.5**	**5002**
Romania	**96.9**	**3.1**	**4037**
Russia	**98.7**	**4.4**	**4828**
Slovak Republic	**99.0**	**4.9**	**6389**
Slovenia	**96.0**	**6.2**	**10404**
Tajikistan	**96.7**	**9.5**	**1117**
Turkmenistan	**97.7**	**7.9**	**3469**
Ukraine	**98.8**	**8.2**	**2718**
Uzbekistan	**97.2**	**11.0**	**2438**

Table 3: Pupil-teacher ratios at the primary and secondary levels, repetition rates at the primary and secondary levels, and dropout rates at the primary level in 1990 and later. Source: the Barro-Lee data set and the *Statistical Yearbook* of UNESCO.

Country	P/T PRIM	P/T SEC	REP PRIM	REP SEC	DROP
Albania	**19**	**21**	**5**		**15**
Belarus	**17**	**13**	**1**		
Bulgaria	**15**	**14**	**5**	**1**	**19**
Croatia	**19**	**16**	**1**		
Czech Republic	**23**	**11**	**1**		
East Germany	**17**	**9**			**4**
Estonia	**18**	**10**	**3**		
Hungary	**12**	**12**	**3**	**1**	**6**
Latvia	**14**	**9**	**3**		

Lithuania	**18**	**10**	**3**		
Moldova	**23**	**13**	**1**		
Poland	**16**	**18**	**2**	**1**	**7**
Romania	**17**	**18**	**4**	**5**	**6**
Russia	**22**	**13**	**2**		
Slovak Republic	**22**	**14**	**2**		
Slovenia	**16**	**15**	**1**		
Ukraine	**33**	**8**	**1**		
Yugoslavia	**23**	**17**	**2**	**5**	**2**